IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before application of: Kevin A. Shea et al.
Application No.: To be assigned
Filed: Herewith
Confirmation No.: To be assigned
For: METHOD AND SYSTEM FOR POSITIONING GUIDE ARMS IN A STRIP FABRICATION ASSEMBLY
Examiner: To be assigned
Art Unit: To be assigned
Attorney Reference No.: 2340-67566

CERTIFICATE OF EXPRESS MAILING

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Attorney for Applicant(s) _____

Date Mailed January 16, 2004

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PRELIMINARY AMENDMENT

Prior to examination, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims, which begins on page 4 of this paper.

Amendments to the Drawings begin on page 7 of this paper, and include the attached two Replacement sheets and two Annotated Sheets.

Remarks begin on page 8 of this paper.

EXHIBIT
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Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 6, with the following rewritten paragraph:

The present application is a divisional application of co-pending U.S. patent application Serial No. 10/121,304, filed April 12, 2002, which is a continuation-in-part of U.S. patent application Serial No. 09/912,914, filed July 25, 2001, which in turn claims the benefit of U.S. provisional application Serial Nos. 60/285,442 filed April 19, 2001, and 60/283,490 filed April 12, 2001, all of which are incorporated herein. ~~The present application is a continuation in part of U.S. patent application Serial No. 09/912,914, filed July 25, 2001, which is incorporated herein.~~

Please replace the paragraph beginning at page 8, line 4, with the following rewritten paragraph:

FIG. 12A is a detail view of the sensor and support structure of the web tracking system of FIG. 11, ~~with~~ and FIG. 12B is an enlarged view of the sensor;

Please replace the paragraph beginning at page 10, line 19, with the following rewritten paragraph:

A flexible coupling 162 connects a given threaded rod 116 to a corresponding servo motor 165 with an attached gear head (not shown) having a drive shaft 167 joined to the flexible couplings 162. There is one servo motor 165 for each threaded rod 116, e.g., in the illustrated apparatus there would be six motors 165. Each servo motor 165 is connected to an operating computer 170 and an external power source ~~170~~ 171. The apparatus 108 could have any number of rods and/or motors, depending on the number of operating units used. All rods are positioned in a parallel or substantially parallel relationship. More motors than rods could be present for backup purposes.

Please replace the paragraph beginning at page 13, line 18 through page 14, line 2, with the following rewritten paragraph:

In one embodiment, for example, the system for positioning guide members is used in conjunction with a web tracking unit. Referring to Figs. 11 ~~and 12~~, 12A and 12B, a web tracking unit 175 is used to track the position of a web 113 as it moves right or left from the normal web path or position. The web tracking unit 175 is also used to maintain the position of the guide arms 111 in relation to the web 113. The web tracking unit 175 is placed up stream from the positioning apparatus 108 on a beam 176 of the frame of the web handling machine. The web handling machine supports spaced web guiding rollers 178, 179 and 180. As the web 113 passes the roller 179, the tracking unit 175 looks at the position of the web 113. The web tracking unit 175 includes a linear slide 182, supporting an arm 184 that supports a pair of sensors 185 and 186 that are spaced transversely or substantially transversely of the normal web path and that are spaced in the direction of movement of the web 113. The arm 184 is moved along the linear slide 182 by a servo motor 188. The linear slide 182 is supported from the beam 176, which also supports a cable track 189, which supports electrical cables (not shown). The servo motor 188 is coupled to a threaded rod 187 in the linear slide 182 and the threaded rod is connected to the arm 184. As formed, one spin of the threaded rod clockwise or counterclockwise moves the arm 184 10 millimeters and the encoder of the servo motor takes 4000 counts per revolution to precisely tell the position of the arm 184.

Please replace the paragraph beginning at page 14, line 3, with the following rewritten paragraph:

Referring now to Figs. ~~12~~ 12A, 12B and 13, the sensors 185 and 186 are formed of optical fibers. A laser light travels through each fiber and exits toward the web 113 on one side thereof. Light is reflected from the web 113 back to the fiber and is received by light receivers and sensor amplifiers 190 and 191, respectively. The sensors 185 and 186 have a built in alternating light source to avoid interference, or avoid one fiber from receiving reflected light from the other fiber. Again, each fiber is an emitter and receiver. The amplifiers 190 and 191 generate signals to the PLC of the positioning apparatus 108, which sends signals to the servo motor 188 to move the sensors, and then move the guide arms 111.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25 (canceled).

Claim 26 (original): A method of positioning multiple operating units relative to a moving web, said method comprising:

entering a plurality of positions into a controller, said positions corresponding to a plurality of operating units;

moving said operating units to said positions in response to a signal from said controller;

sensing the position of an edge of a moving web; and,

when the position of the edge of said web changes, changing the position of said operating units.

Claim 27 (original): The method of claim 26, wherein a web tracking unit senses the position of said edge of said moving web, said web tracking unit comprising a pair of spaced optical sensors for directing light toward a web and receiving reflected light from the web, said sensors being capable of signaling a motor to move said sensors until a desired signal is received from said sensors.

Claim 28 (original): The method of claim 27, wherein the desired signal from said pair of sensors is a "1" and a "0", the "1" being a reflection from a web, the "0" being no reflection, wherein said motor moves said sensors when the signal from said sensors is the same.

Claim 29 (original): The method of claim 27, wherein said operating units comprise guide arms.

Claim 30 (original): An apparatus for controlling a number of operating units, said apparatus comprising:

a user interface;

a control system connected to said user interface, said control system comprising

a receiver for receiving a plurality of positions corresponding to a plurality of operating units, said plurality of positions being entered into said control system through said user interface, and

a transmitter for transmitting control signals to a plurality of servo motors, which are coupled to the operating units, to thereby move the operating units based on the plurality of positions; and

a web tracking unit connected to said control system, said web tracking unit comprising sensors for sensing the position of an edge of a moving web.

Claim 31 (original): The apparatus of claim 30, wherein when said tracking unit senses a change in the position of the edge of a moving web, said web tracking unit sends a signal to said control system to change the position of said operating units relative to the change in position of the edge of the moving web.

Claim 32 (original): The apparatus of claim 30, wherein said operating units comprise guide arms.

Claim 33 (new): A method for sensing the edge of a moving web, the method comprising:

directing light toward the moving web via a pair of spaced ~~optical~~ sensors;

sensing whether the directed light is reflected by the web; and

moving the optical sensors until the optical sensors receive a desired signal from the ~~light~~ reflected by the web.

Claim 34 (new): The method of claim 33, wherein the desired signal is a "1" and a "0", the "1" being a reflection from the web and the "0" being no reflection from the web, and moving the ~~optical~~ sensors when the signal is both a "1" or both a "0".

Claim 35 (new): The method of claim 27, wherein the operating units comprise guide arms, and the signal from the motor also signals a motor to move the guide arms.

Claim 36 (new): An apparatus for dispensing strip materials onto a moving web, comprising:

a plurality of feed rollers, positioned to integrate at least one strip material into a strip product;

a plurality of guide members located proximate said rollers, wherein said guide members are configured to align the strip materials;

a user input device configured to receive and record input for a predetermined respective position for each respective guide member;

a web tracking unit that includes sensors for sensing the position of an edge of the moving web; and

means for automatically adjusting the position of each guide member in response to guide member position input transmitted from the user input device and web edge position input transmitted from the web tracking unit.

Claim 37 (new): The apparatus of claim 36, wherein the web tracking unit sensors comprise a pair of spaced optical sensors configured to direct light toward the moving web and receive reflected light from the moving web.

Claim 38 (new): The apparatus of claim 36, wherein said automatic adjusting means includes at least one motor coupled to said guide members.

Claim 39 (new): The apparatus of claim 36, wherein said input device allows the entry and retention of multiple sets of guide member positions corresponding to different strip product orders.

Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 7 and 12. These sheets, which include Figs. 7, 12A and 12B, replace the original sheets 7 and 12 of the original drawings. In Fig. 7, previously omitted element 171 has been added. In Fig. 12, the sheet has been changed to separate Fig. 12 into Fig. 12A and Fig. 12B.

Attachment(s): Replacement Sheets (2)

Annotated Sheets Showing Changes (2)

Remarks

The specification has been amended to indicate that the present application is a divisional of U.S. Application No. 10/121,304, filed April 12, 2002. The specification and drawings have also been amended to make the corrections requested by the examiner in the parent application. Claims 1-25 that were elected in the parent application are canceled. New claims 33-39 have been added. Support for claims 33, 35 and 37 is found in the specification at page 14, lines 3-11. Support for claim 34 is found in the specification at page 14, lines 12-30. Support for claims 36 and 38 is found throughout the specification. Support for claim 39 is found in the specification at page 11, lines 26-30. Entry of these amendments is respectfully requested.

Applicants look forward to receiving the first action on the merits.

Respectfully submitted,

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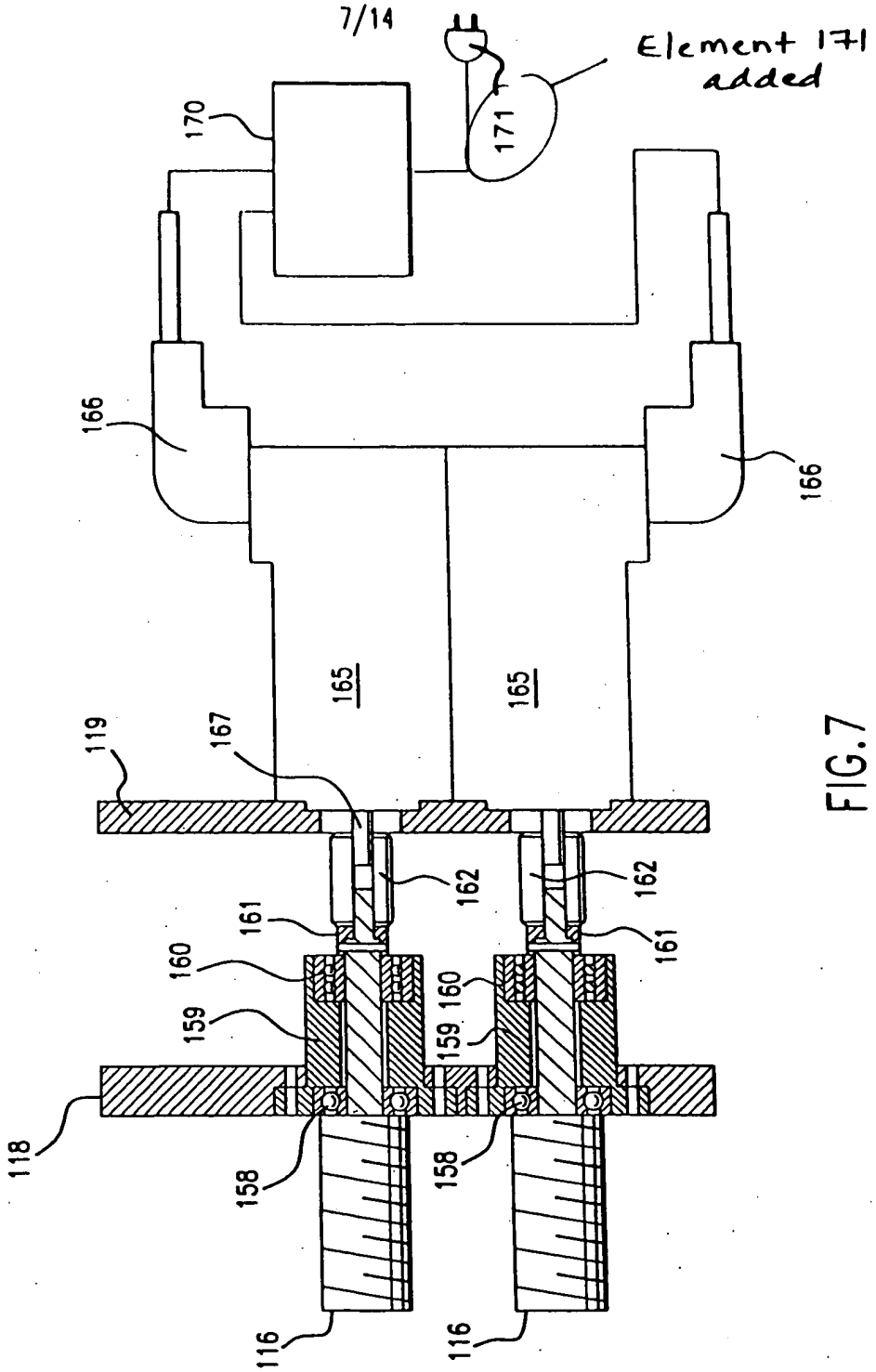
Element 171 added
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FIG.7

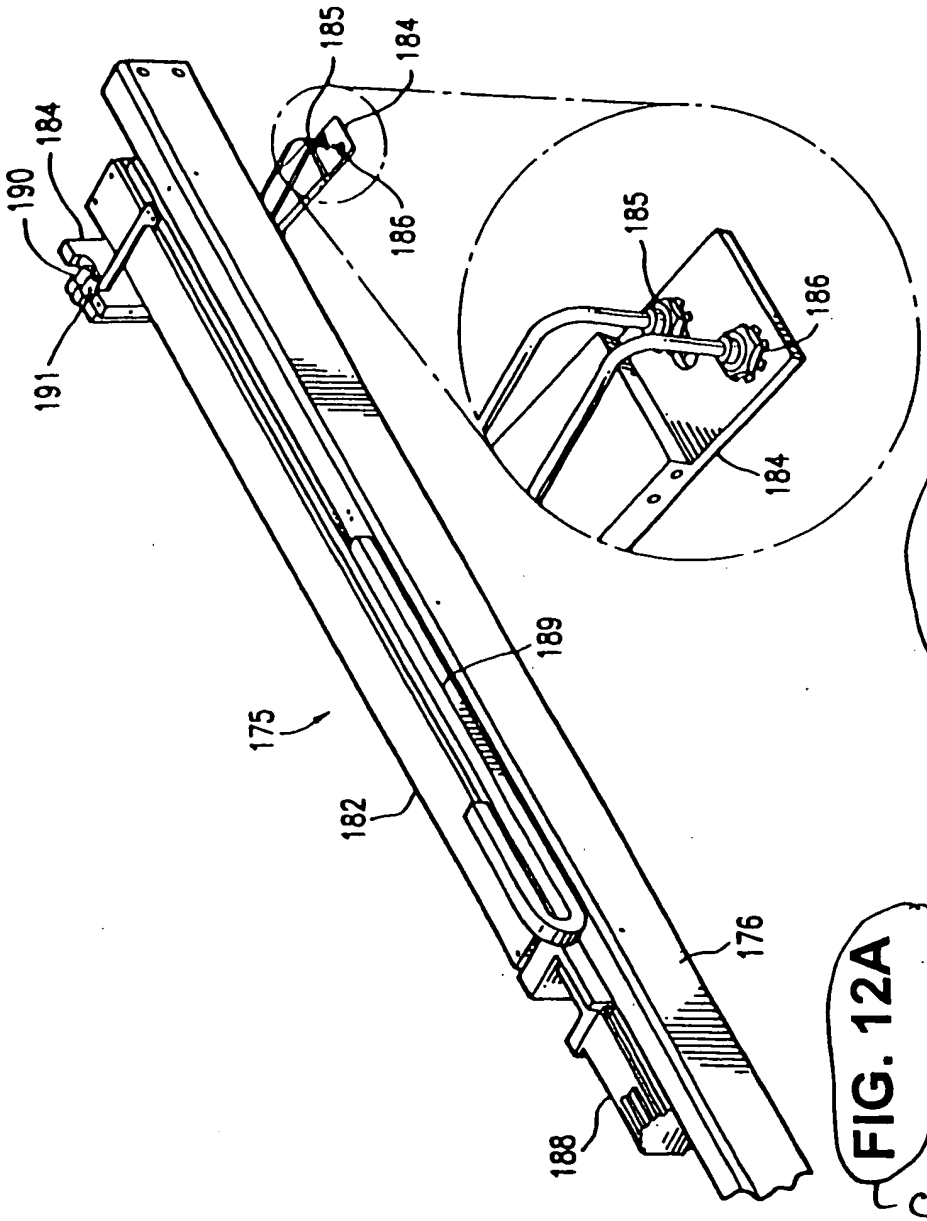

FIG. 12B

Caption added

FIG. 12A

Caption added

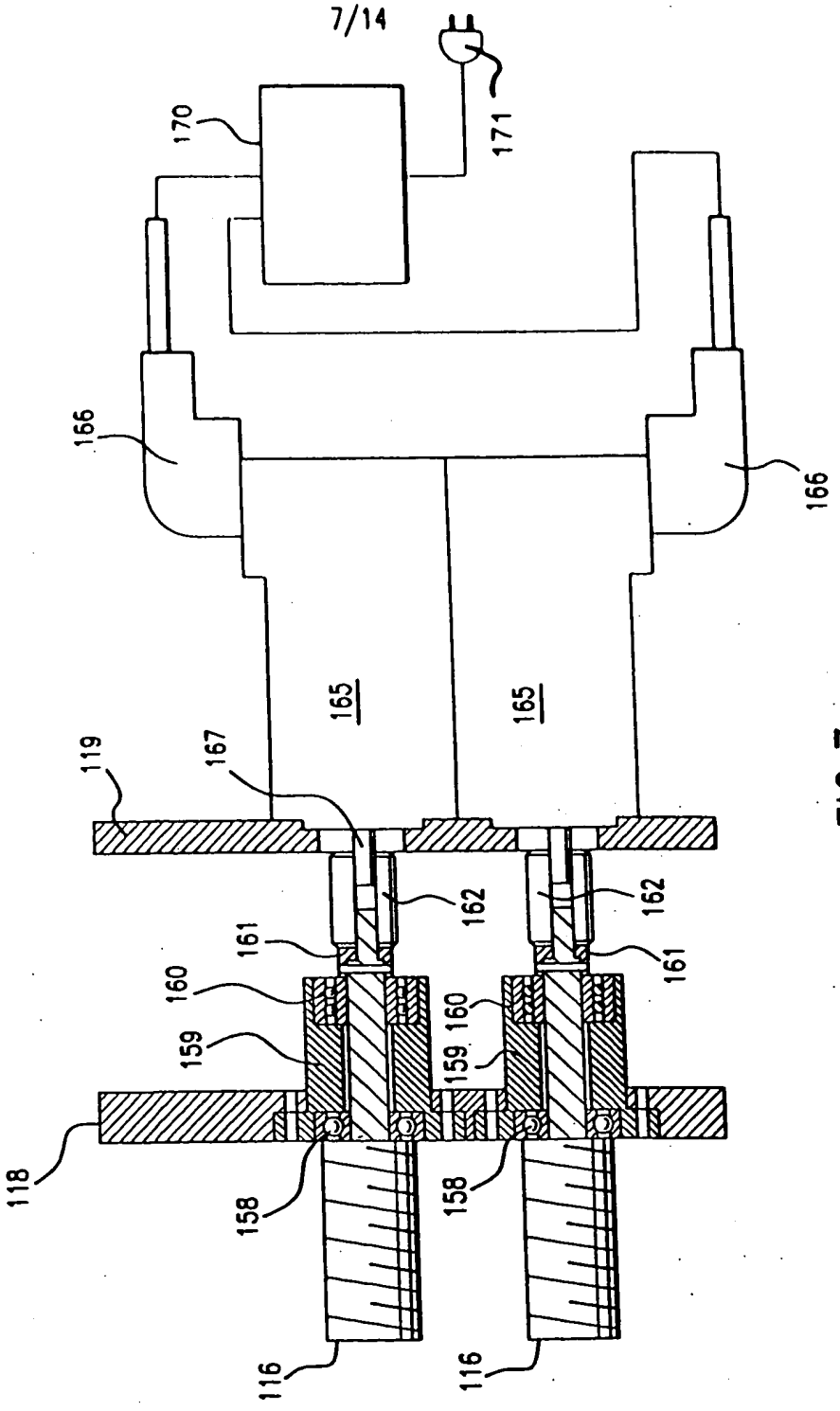

FIG.7

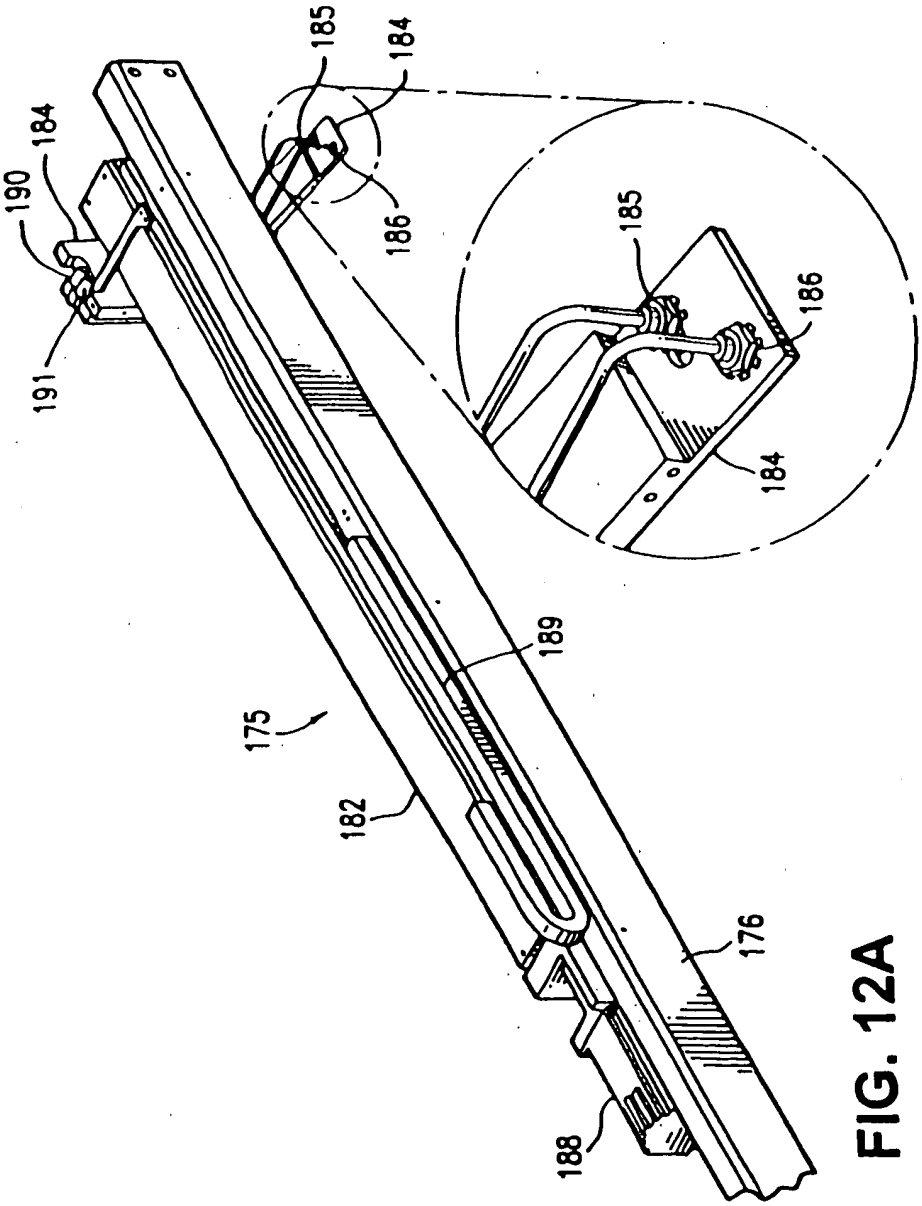

FIG. 12A

FIG. 12B